

DESCRIPTIONS OF SOME NEW TACHINIDAE.

BY CHARLES H. T. TOWNSEND.

The following are descriptions of new forms of Tachinidae that have been studied during the seasons of 1908 and 1909, embracing some material handled at the Gypsy Moth Laboratory in Massachusetts.

Phasmophaga gen. nov.

Front long and very prominent in profile in both sexes. Front in female about as wide as both eyes, wider in male owing to the great antennal development in that sex; front and face nearly equal in width; two to three proclinate orbital bristles on each side in both sexes, the middle one of the three usually atrophied. Ocellar bristles strong, outwardly proclinate. Facialia ciliate half way up, especially ridge-like and pronounced in male. Frontal bristles descending to insertion of arista in female, but the arista is inserted higher in the male. No trace of median carina on facial plate.

Antennae and arista concolorous, wholly orange-yellow; arista thickened its whole length, a little over half to nearly two-thirds as long as third antennal joint in male, in female more pointed and fully as long as third antennal joint, basal joints stout and as long as wide. Eyes bare. Facial plate very deeply depressed in male to hold the greatly developed third antennal joint, which extends almost from plane of front to vibrissae; third antennal joint in female much more slender and extending less than three-fourths way to vibrissae. Second antennal joint very short in both sexes. Vibrissal angles on level with oral margin. Vibrissae strong and decussate. Facialia especially bowed in profile in male, the vibrissae inserted on under side of head. Parafacials narrower in male than in female. Palpi well developed, club-shaped. Proboscis short and fleshy. Two sternopleural and three postsutural bristles. Apical scutellar bristles delicate but long and decussate. Discal bristles of abdomen present in both sexes. Hind tibiae with irregular bristles. Apical cell very short-petiolate or moderately so, ending well before wing apex. Fourth vein bent at a wide angle, hind cross-vein irregularly bowed or straight, in middle between bend and small cross-vein.

Reproductive habit, leaf-oviposition. Type, *P. antennalis*, n. sp.

Phasmophaga antennalis n. sp.

Length, 4.5 to 7 mm. Blackish, cinereous pollinose, except the orange-yellow antennae and arista, the pale yellow palpi, and the reddish-yellow legs, of which alone the tarsi are blackish; parafacials more silvery pollinose. Frontalia nearly equilateral. Arista of male a little over half as long as third antennal joint. Tegulae whitish, wings clear. Hind cross-vein irregularly bowed. Apical cell very short-petiolate. The pollen easily detaches from abdomen leaving it blackish in male, brownish-yellow on sides and venter in female. From above the last half of second, third, and fourth abdominal segments appears blackish, but all pollinose from directly behind.

Type, No. 12618, U. S. N. M.

Two females and three males all reared, with many others, from *Diapheromera femorata*, by Messrs. H. H. and H. C. Severin, the material all being from Wisconsin. The Severins are preparing an exhaustive monograph on the subject of the host and its parasites.

Phasmophaga meridionalis n. sp.

A collected male, from Plano, Texas, July, 1907 (E. S. Tucker), may best be placed in this genus, but is a very distinct form from the preceding species. It has no discal bristles, and the front is short, not so produced, the frontalia being much widened behind. The arista is longer, being two-thirds as long as third antennal joint; the petiole of apical cell is not so short, and hind cross vein is straight. The face is fully three-fifths of head-width, and the front hardly narrowed.

Type, No. 12619, U. S. N. M.

A male specimen of *Phasmophaga* in the collection, which seems same as *meridionalis*, was reared at Cutler, Florida, from *Anisomorpha buprestoides*, May 29, 1908 (Chittenden, No. 361; Russell, Coll.) It has no discal bristles, the apical cell is short-petiolate, there are two proclinate orbital bristles, the frontalia are equal in width and take up fully one-half the width of front. The arista is scarcely two-thirds the length of the third antennal joint, the face is about three-fifths of head-width, and the hind cross-vein is straight.

Dissection of one of the females of *P. antennalis*, that had been left in the breeding cage for some days after issuance, disclosed the characteristic minute eggs of the leaf-ovipositing forms of Tachinids. It is thus certain that the walking-sticks swallow the eggs of *Phasmophaga* while feeding on the leaves of their food plants.

The genus is closely related on external anatomical characters to *Hypertrophocera* and *Euryceromyia*, less so to *Euthyprosopa*

and *Pseudatractocera*. The following table will serve to distinguish it from these forms and to point out the relationships of each to the others:

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| 1. | Orbital bristles absent in male, front of male not over one-third head-width, second antennal joint elongate, third antennal joint of male only a little over twice as long as second, arista thickened on only its basal one-fourth to one-third, male claws elongate and female claws shorter; facial carina present, of solete below; apical cell closed in margin or very short-petiolate, ending well before wingtip. | <i>Pseudatractocera</i> |
| | Orbital bristles in both sexes, front of both sexes never less than about one-half of head-width and often more, second antennal joint never elongate, third antennal joint of male always greatly developed, arista always thickened practically its whole length, claws same in both sexes and short or but little elongate | 2 |
| 2. | Facialia ciliate one-half way up, frontal bristles descending normally below base of antennae, discal abdominal bristles present except in <i>P. meridionalis</i> , no facial carina. | 3 |
| | Facialia bare, frontal bristles descending to opposite lower border of eyes, third antennal joint always equilateral, second aristal joint not elongate, discal abdominal bristles absent, apical cell ending well before wingtip | 4 |
| 3. | Fourth vein obsolete apically, third vein ending near wingtip; second aristal joint elongate, third antennal joint of male subtriangular, cheeks nearly as wide as eye-height. | <i>Euryceromyia</i> |
| | Fourth vein entire, apical cell very short petiolate and ending well before wingtip; second aristal joint short, third antennal joint equilateral in both sexes, cheeks not over one-half of eye-height. | <i>Phasmophaga</i> |
| 4. | No facial carina, apical cell closed in margin. | <i>Hypertrophocera</i> |
| | Facial carina present, apical cell petiolate. | <i>Euthyprosopa</i> |

This study of *Phasmophaga* and its comparison with the above related genera have demonstrated with considerable certainty that *Neotractocera* Towns. is but the female of *Hypertrophocera* Towns. In that case the latter name holds for the genus.

These genera are evidently allied to *Baumhaueria*, *Thelymorpha*, *Urophylla*, and less so to *Brachychaeta*. Brauer and Von Bergenstamm put *Urophylla* in their group Thryptocera, but it certainly seems more closely allied with *Thelymorpha*. They also refer *Euryceromyia* and *Hypertrophocera* to their group Thryptocera, while they refer *Neotractocera*, *Euthyprosopa* and *Pseudatractocera* to their group Paramacronychia along with *Melanophrys*. That the latter does not belong as referred by them is evident from the fact that dissection of females shows the genus to have the leaf-larviposition habit, and thus to belong to the Echinomyiine-Hystriciine series. *Hypertrophocera* especially is so clearly related to *Phasmophaga* in its anatomy that it seems certain that it has the leaf-ovipositing habit. That *Phasmophaga* does not belong to the Thryptocera group is clear, since the latter genus, if we may judge from dissections of the closely allied *Bigonichaeta*, must have the host-larviposition habit. Thus we

seem compelled to combine our genera in one group with *Baumhaueria*, etc., and if that genus proves to have the leaf-oviposition habit this arrangement will be duly substantiated.

The European genus *Pexopsis* B. B (type *tibialis* Meig.) seems to form with *Pseudatractocera* a connection between the Baumhaueriinae and the Masiceratinae. Like *Pseudatractocera* it lacks orbital bristles in the male, but resembles the Baumhaueriinae in the weight of its other characters.

Cyclotaphrys gen. nov.

This genus differs from *Tachina* (*larvarum*) as follows: Facialia not at all ciliate; second arisal joint elongate; parafrontals of male with fine hairs outside frontal row; apical cell closed in border before wingtip; second antennal joint moderately elongate; vibrissae not strong, inserted near oral margin.

The eyes are thinly short-hairy; parafacials moderately wide, of even width; palpi elongate, curved, subcylindrical, a little thickened on apical half; apical scutellar bristles suberect and decussate; ovipositor very long and large; hind tibiae in both sexes quite thickly short-ciliate, with two stronger bristles near middle; fourth vein with wrinkle with bend. Claws of male elongate. Two strong and one weak sternopleural bristles; four postsutural bristles.

In the last-stage maggot and puparium the middle slit of each stigma is shortened and pushed outward at lower end so as to make the three slits appear somewhat like an irregular circle. The slits are sometimes very crooked and abruptly bent.

Reproductive habit, supracutaneous host-oviposition. Type, *C. anser* n. sp.

Cyclotaphrys anser n. sp.

Length 10 to 12 mm. Blackish, covered with silvery bloom. Parafacials wholly silvery-white, parafrontals with very faint tinge of golden in both sexes; third antennal joint three times as long as second; palpi yellow; sides and tip of abdomen of male reddish, tip of abdomen of female reddish.

First abdominal segment and apical borders of second and third segments more or less shining black. The species deposits a golden-yellow egg.

Type, No. 12620, U. S. N. M.

Numerous specimens reared from importations of *Euproctis chrysorrhoea* received at the Gipsy Moth Laboratory from Simferopol, Russia (Mokchetsky).

Tachina japonica n. sp.

Length, 10 to 12 mm. Differs from *larvarum* as follows: More deeply colored, the golden on parafrontals heavy and extending heavily on parafacials nearly to cheek grooves in male. The pollen of mesoscutum is of a distinctly brassy shade, contrasting readily and abruptly in both sexes with the silvery pollen of the pleurae. In *larvarum* the golden shade on the parafrontals is thin in both sexes and does not invade the parafacials to any extent, while the pollen of mesoscutum and pleurae is concolorous and wholly silvery.

Type, No. 12621, U. S. N. M.

Many specimens of both sexes reared from importations of *Porthetria* received at the Gipsy Moth Laboratory from the vicinity of Tokyo, Japan, 1908 (Kincaid).

Paragermaria gen. nov.

Differs from *Pseudogermaria* as follows:

Cheeks about one-fourth eye-height; parafacials hairy; ocellar bristles long, reclinate; no orbital bristles in male, female with two proclinate ones; two rows of frontal bristles on each side; front of male wider at vertex than one eye, face of male as wide as both eyes; face and front of female nearly same width, except vertex which is noticeably wider than that of male; frontal bristles descending below insertion of arista; vibrissae strong, decussate; second antennal joint more elongate in female than in male, third joint more elongate in male than in female, third joint being hardly two and one-half times as long as second in female and more than four times as long as second in male; palpi slender, thickened at tip; apical pair of scutellar bristles not as strong as lateral pairs, but long and divergent. The intermediate segments of abdomen of both sexes lack discal bristles, and first segment is without medial marginal ones; abdomen and scutellum clothed with suberect bristly hairs.

Reproductive habit, leaf-oviposition. Type, *P. autumnalis* n. sp.

Paragermaria autumnalis n. sp.

Length, 9 mm. Blackish, with more or less of gray bloom. Head of both sexes entirely pale brassy pollinose, except the brown frontalia and antennae, the second joint of which is reddish. Apical portion of scutellum, whole of apical segment of abdomen of female, tip of apical segment of male, and tibiae reddish. Pleurae, scutellum, femora, and all of abdomen except basal segment and more or less of posterior margins of other segments with a silvery bloom showing less of brassy if any than that of head. Mesoscutum with less of pollen, showing four heavy black vittae and a median fifth one behind suture.

Type, No. 12622, U. S. N. M.

Numerous specimens of both sexes taken through September, 1908, Melrose Highlands, Massachusetts, on flowers of *Aster* sp., also on *Solidago* flowers and foliage. The dissected females uniformly contained a long coiled uterus filled with black microscopic eggs ready for leaf-deposition.

***Sisyropa hemerocampae* n. sp.**

Syn., *Exorista griseomicans* Coq. (non. v. d. W.) pt.

Length, 7 to 8 mm. Front about or nearly width of one eye in female; more narrowed, especially at vertex, in male. Parafrontals, parafacials and facial plate entirely silvery; frontalia brown; antennae brownish with slight silvery bloom, articulations slightly fulvous; palpi yellowish. Thorax and scutellum yellowish, dusted with silvery, with five vittae. Pleurae silvery. Apical scutellar bristles long and strongly cruciate. Abdomen blackish, sides of second and third segments above broadly reddish, whole ventral surface yellowish-red except median vittae and anal segments. Legs reddish-yellow, tarsi brownish. Tegulae whitish, wings clear.

Type, No. 12623, U. S. N. M.

Two females labeled: Gipsy Moth Laboratory, No. 820-0, 1907. One male, labeled: Washington, D. C., F. D. Couden, Coll. Adult issued October 2, 1907. All three specimens reared from *Hemerocampa leucostigma*.

This species has been collected in the field at Melrose Highlands, Massachusetts, the female specimen bearing Gipsy Moth Laboratory No. 1076 being indistinguishable from the above specimens.

The genus *Sisyropa*, which belongs in the subfamily Hemimasiceratinae, may be distinguished from the closely similar genus *Enmusicera* (described below) of the Masiceratinae as follows: *Sisyropa* has the face and front of female very narrow, nearly equilateral, and equal to width of one eye; cheeks and parafacials extremely narrow, the latter at narrowest equal to half length of second antennal joint or even less; eyes thickly to densely pilose; palpi moderately stout basally, a little enlarged at tip; scutellum and abdomen with thickly placed erect hairs; apical pair of scutellar bristles long; antennae inserted well above eye-middle. Reproductive habit, larviposition.

Eumasicera gen. nov.

Differs from *Sisyropa* (as above outlined) as follows: Face and front of female wider than one eye; cheeks and parafacials wider, latter more rapidly widening above; eyes thinly pubescent; palpi slender basally and abruptly widened and thickened apically; scutellum with sparse erect hairs, abdomen with short appressed bristles; apical pair of scutellar bristles short; antennae inserted about on eye-middle.

Reproductive habit, leaf oviposition. Type *L. coccidella* n. sp.

Eumasicera coccidella n. sp.

Length, 8 mm. Faintly brassy pollinose all over, except the face which is silvery, and the first abdominal segment and legs which are blackish. Palpi reddish-yellow.

Type, No. 12624, U. S. N. M.

One female, No. 1075, Gipsy Laboratory.

The minute eggs of this species, obtained from the tubular coiled uterus of the female, are black and show a remarkable light-colored subdentate fringe around the edge, the indentations marking divisions in the fringe and the divisions exhibiting a network structure shot with microscopic holes. The chorion of the egg is reticulate after the ordinary plan. These eggs are seen to be flattened and the chitinous chorion marks the superior surface, while the surface attached to the leaf at time of oviposition is furnished with a thin membranous unchitinized covering.

Rileyella gen. nov.

Differs from *Achactoneura* as follows: Both sexes without median macrochaetae on first and second abdominal segments above, either discal or marginal.

Type, *Tachina aletiae* Riley.

Eucelatoria gen. nov.

This genus is erected for *Tachina* (*Masicera* [*Frontina*]) *armigera* Coqt.

Orbital bristles present in female, absent in male. Eyes bare. Abdomen with discal bristles on intermediate segments in male, but without median bristles either marginal or discal on first two segments in female. Median ventral carina present in female, strongly developed, piercing sheath present.

Reproductive habit, subcutaneous host-larviposition.

Cordyligaster septentrionalis n. sp.

Length, 11 to 13 mm. Ground color black, more or less shining; head silvery-white pollinose, thinner at vertex both before and behind; frontalia brown or black, somewhat shining; antennae black, thinly silvery dusted; pleurae, coxae and narrow bases of last three abdominal segments silvery-white; mesoscutum and scutellum shining-metallic, without vittae; tegulae transparent; wings with wide costal border smoky-yellowish, faintly tinging inner portion. Apical cross-vein deeply bowed inward, forming right-angle with fourth vein. Palpi pale-yellowish but appearing blackish from black hairs and silvery bloom. Femora very thinly dusted with silver.

Type, No. 12625, U. S. N. M.

Numerous specimens of both sexes from Plummers Island, Maryland, June and July, 1907 (Dr. A. K. Fisher).

Parachaeta Coqt.

The generic description of *Parachaeta* needs revision. Only the male was described. That sex is without macrochaetae on the second abdominal segment, while the female has a pair of stout macrochaetae on the hind margin of that segment and sometimes a shorter pair between them. The absence of macrochaetae on the second segment thus becomes a secondary sexual character in this genus.

The common New England species is the *Parachaeta bicolor* of Coquillett's Revision but not of Macquart. The female is darker in coloration than the male, and shows no reddish on sides of abdomen in the specimens that I have examined. The species does not agree well with Bigot's description of *inermis*. The type of the latter must be examined.